

Flexible High-Efficiency Solar Panels for SmallSats and CubeSats, Phase I

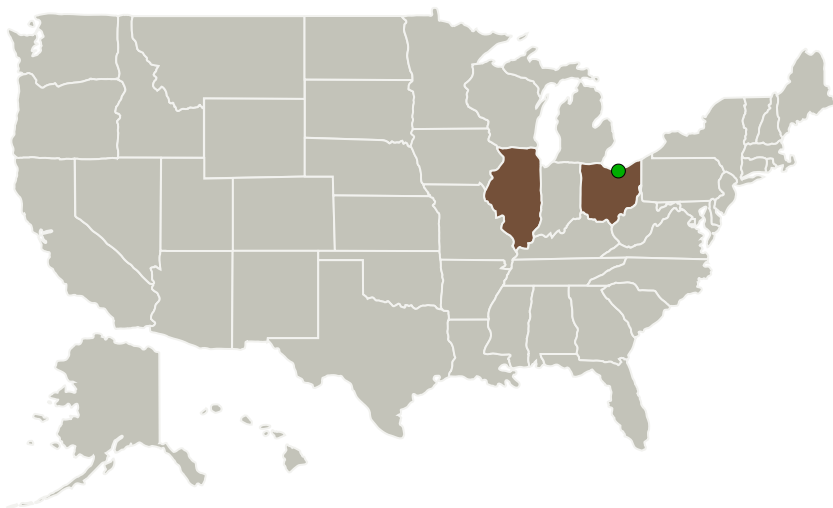
Completed Technology Project (2017 - 2017)



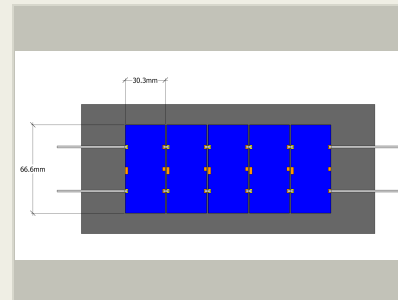
Project Introduction

MicroLink proposes to develop and test, a new type of photovoltaic module that will be suitable for use in SmallSat and CubeSat platforms requiring maximum power in a highly stowable format. MicroLink proposes to assemble and test a completed series array of five 20 cm² cells that will output in excess of 3.5 W while demonstrating a pathway for producing significantly larger arrays capable of outputting powers in excess of 100 W. The typical areal weight of conventional Ge-based space cells with a 5 mil thick rigid coverglass exceeds 1,000 g/m². MicroLink's proposed flexible photovoltaic module with ultra-thin ELO solar cells and flexible coverglass material will not only be flexible and comparable in efficiency to Ge-based cells but also have an areal mass of less than 400 g/m². This represents greater than a 60% reduction in weight which is of particular importance for SmallSat and CubeSat applications.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
MicroLink Devices, Inc.	Lead Organization	Industry Minority-Owned Business	Niles, Illinois
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



Flexible High-Efficiency Solar Panels for SmallSats and CubeSats, Phase I Briefing Chart Image

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Primary U.S. Work Locations

Illinois

Ohio

Project Transitions

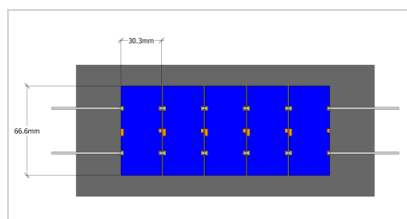
June 2017: Project Start

December 2017: Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/140827>)

Images



Briefing Chart Image

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(<https://techport.nasa.gov/image/127349>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

MicroLink Devices, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

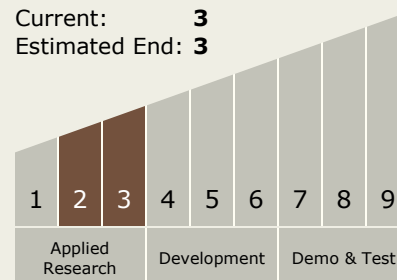
Carlos Torrez

Principal Investigator:

Ray Chan

Technology Maturity (TRL)

Start: 2
Current: 3
Estimated End: 3



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.1 Photovoltaic

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System